

**CITY OF ROCHESTER, MINNESOTA
DEPARTMENT OF PUBLIC WORKS
GRADING PLAN CHECKLIST**

revised May 2000

KEY

☒ = Yes

☒ = No

Blank = Not Applicable

Site: _____

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

GENERAL

- ☐ Completed grading permit application submitted to Public Works with the grading plan.
- ☐ Final plan is signed by a registered professional.
- ☐ Plan is 1"=50' or larger scale. North arrow shown.
- ☐ Name and address of the owner are shown.
- ☐ Property limits are shown. Streets are labeled. Lot & block information shown if platted. Street address shown if unplatted.
- ☐ Plan is drawn in two-foot contours. All finished contours and adequate existing contours are labeled.
- ☐ Existing contours are dashed and proposed are solid.
- ☐ Directional arrows are shown for proposed drainage.
- ☐ Details of terrain and drainage are provided for areas adjacent to the proposed grading.
- ☐ Existing public and private utilities are shown.
- ☐ Wetland areas are shown and protected.
- ☐ All proposed lot corner elevations are shown.
- ☐ Proposed elevations of garage and lowest floor, ground at front and rear of building, along with the structure type are indicated on the plan.
- ☐ Untreated wood construction is min. 6" from the ground.
- ☐ Adequate freeboard to structures. Floor el. or the grade adjacent to the building is at least 1' above any overflow elevation, and at least 2' above any pond 100-year water level, whichever is greater. Min. 1' above FEMA flood el.
- ☐ Drainage flows away from structures.
- ☐ Minimum lot slopes for vegetated areas are 2% preferred, 1% absolute minimum.
- ☐ Percent of slope is shown for streets and drainage swales.
- ☐ Proposed walk is shown for commercial/industrial sites.
- ☐ Fill & cut setbacks which are > 2' (per UBC appendix chapter 33) are dimensioned on the plans (where perimeter cut slope ht. is > 10' or fill slope ht. is > 4').
- ☐ County or Mn/DOT permit obtained for work their ROW.
- ☐ Substantial Land Alteration approved for elevation changes $\geq 10'$ or other criteria that require a SLA.
- ☐ Any City Council approval conditions are met.
- ☐ Storm water management (if required) is addressed.
- ☐ The following areas are tabulated (in acres):
 - Total project area and total impervious and pervious surface areas of project.
 - Total estimated impervious and pervious surface areas of ultimate development.

EROSION CONTROL & TURF ESTABLISHMENT

- ☐ NPDES permit (if applicable) is referred to on the plan.
- ☐ Adjacent property protected from drainage and sediment.
- ☐ Stabilized vehicle exit(s) are provided.
- ☐ Silt fences are provided to protect adjacent property and water bodies from receiving untreated runoff. Silt fences

follow contour lines with ends flared uphill to provide storage capacity. If silt fence is used in concentrated flow areas it is "heavy duty" type.

- ☐ Temporary or permanent cover is indicated for all disturbed areas. Temporary seeding specifies seed mix and includes disk anchored mulch on all slopes longer than 200' or > 5%. Permanent cover specifies topsoil, seed mix and disk anchored mulch, or topsoil and sod.
- ☐ As a minimum, disturbed slopes in excess of 3:1 and slopes longer than 30' in excess of 4:1 are seeded and protected with erosion control blankets or they are sodded and staked. Blanket category specified per Mn/DOT 3885.1. Plan depicts required blanket locations.
- ☐ Temporary or permanent diversion swales to a protected outfall (turf mat, pipe, riprap) are used at the top of slopes exceeding 4:1 when applicable.
- ☐ For sites where temporary or permanent cover will not be complete by November 15, plan indicates adequate measures to control spring erosion & sedimentation.

TEMPORARY SEDIMENTATION BASINS

- ☐ Must be provided if ≥ 10 disturbed acres discharge at a discernable point. Otherwise highly recommended.
- ☐ Sized to detain 0.5" of runoff from the drainage area.
- ☐ Principal and emergency spillway designed per BMP storm frequency standards.
- ☐ Fenced if slopes exceed 4:1.
- ☐ Plan requires any permanent or temporary sediment ponds to be constructed at the beginning of construction.

PERMANENT PONDS

- ☐ Ponds serving less than 50 developable acres and not identified as regional ponds shall be privately owned and maintained.
- ☐ Pond areas are generally platted as outlots. A pond that will serve only the lot on which it is located should simply be a drainage easement on that lot.
- ☐ 50 scale or larger grading plan with pond cross section.
- ☐ Where possible, provide a forebay at the inlet; locate inlet and outlet at opposite ends of pond; and provide length to width ratio > 3.
- ☐ Multi-cell design where practical.
- ☐ 10:1 bench is provided for first 1 foot of depth below normal water elevation.
- ☐ 4:1 max slope from normal water elevation to 100-year water elevation.
- ☐ 3:1 max slope below normal water elevation.
- ☐ Pond depth is 4 to 10 feet based on normal water level.
- ☐ Normal water elevation is shown.
- ☐ 100-year high water level is shown.
- ☐ Inlets are at or below normal water level.

- ☐ Outlet is designed to prevent short circuiting and discharge of floating debris, and is designed to meet NPDES particle removal requirements.
- ☐ Piped outlet accommodates a minimum 10-year event.
- ☐ Emergency overflow spillway is provided to accommodate 100-year event. High point elevation and direction of overflow are marked on plans.
- ☐ Emergency overflow spillway is located to protect adjacent property and large fill sections.
- ☐ 100-year runoff which is designed to flow to the pond does not bypass the pond; unmodeled 100-year flow does not enter the pond.
- ☐ Minimum 10' width at top of dam (if dam is < 15' high).
- ☐ 12' wide access and turn-around area for maintenance vehicles is shown on a slope $\leq 15\%$, cross slope $\leq 6\%$.
- ☐ Pond access is included in a min. 15' wide portion of the pond outlet. If access is in an easement across private property, a 12' wide paved access road is provided.
- ☐ For public ponds, seed mix Mn/DOT 25A for a 10' perimeter around the pond. Seed mix Mn/DOT 15A for the remainder of the pond outlet.
- ☐ DNR dam safety permit obtained if dam height is > 6' and storage to top of dam is > 15 acre-ft.

DRAINAGE SWALES & EASEMENTS

- ☐ Drainage easements are provided where concentrated flow is received from more than 1 adjacent lot and also where concentrated flow is received from more than 1 acre of adjacent property.
- ☐ Drainage easements are shown and labeled on the plan.
- ☐ Minimum drainage easements for flows from 1 acre or less or 4 lots or less are a minimum of 15' wide. Ditch is 1.9' deep V-shaped with 4:1 slopes.
- ☐ Minimum drainage easements for flows from more than 1 acre or more than 4 lots are a minimum of 20' wide. Ditch is a minimum of 2' deep with a 4' bottom and 4:1 slopes up to the easement line.
- ☐ Control elevations for drainage ways are provided.
- ☐ Minimum slope of small drainage swales is 2%.
- ☐ Drainage easements are seeded and protected with erosion control blankets or they are sodded where concentrated flow from more than 1 acre or 4 lots is directed. Blanket category specified per Mn/DOT 3885.1. Plan depicts required blanket locations.
- ☐ Velocity computations are provided for drainage easements where concentrated flow from more than 2 acres or 8 lots is directed. Where 10-year velocities exceed 5 ft/sec, permanent turf reinforcement mats are installed per City std. plate 7-05. Blanket per Mn/DOT

3888.2A2 or manufacturer and product is specified. Plan depicts blanket locations and cross sections.

- ☐ Easement documents are signed and submitted to Public Works with a check for recording if not included in plat.

STORM DRAIN SYSTEM, INLETS, & OVERFLOWS

- ☐ All apron elevations (inlets and outlets) are labeled. Area inlet elevations are labeled. Pipe sizes are labeled.
- ☐ 400' max. manhole spacing for lines 15" diameter or less.
- ☐ 500' max. manhole spacing for lines 18" to 30" diameter.
- ☐ Drainage from subdrains, sump pumps, and building storm drains does not flow through public CB's.
- ☐ Not more than 3 CB's in a series (at an intersection) before connecting to the storm sewer main.
- ☐ Storm sewer main generally does not flow through CB's.
- ☐ Flow direction change is $\leq 90^\circ$ at junctions.
- ☐ Drainage does not cross intersections (no valley gutters).
- ☐ CB spacing as necessary for inlet capacity, and not exceeding 1000' on residential streets or 600' on collector and arterial streets.
- ☐ Apron inlets to the storm sewer include trash racks.
- ☐ Trash racks on inlet structures in wooded areas designed assuming a minimum of 50% plugging condition.
- ☐ Drainage from off street parking is collected on-site and not sheet drained onto sidewalks or adjacent property.
- ☐ Swale drainage is collected in CB before crossing walk.
- ☐ Overflow swales are provided which limit the depth of ponding in the street to 2' or less.
- ☐ Emergency overflow with the high point elevation and direction of overflow are marked on plans.
- ☐ Emergency overflow swale meets minimum drainage easement standards noted above.

OUTLETS & ENERGY DISSIPATION

- ☐ Discharge direction of flow generally 45 degrees or less to the flow direction of receiving ditch or stream.
- ☐ Discharges to rear property lines shall generally be piped to at least the rear property line.
- ☐ Where discharge pipe velocities are 10 fps or less, riprap and filter volumes are indicated in accordance with Mn/DOT Standard Plate No. 3133 or 3134.
- ☐ Where discharge pipe velocities are greater than 10 fps, energy dissipater is provided along with riprap and filter.
- ☐ Discharges on slopes steeper than 2% shall not be allowed unless discharge is into existing drainage ditch and volume of water in ditch is not greater than 110% of the pre-developed condition.

COMMENTS:
